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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/563,117	01/03/2006	Graham John Woodgate	250152-1810	8033

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EXAMINER

WONG, ERIC K

ART UNIT	PAPER NUMBER
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2883

MAIL DATE	DELIVERY MODE
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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/563,117	Applicant(s) WOODGATE ET AL.	
	Examiner Eric Wong	Art Unit 2883	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 March 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 17 and 18 is/are allowed.
- 6) ☒ Claim(s) 1-16 and 19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 3/14/08 have been fully considered but they are not entirely persuasive.
 - a. With respect to claim 1, applicant argues that Woodgate does not disclose a "second birefringent material". Examiner respectfully disagrees. As disclosed in figure 9B, each microstructure (142, 138, 134, and 132) are birefringent. Applicant further argues and cites the definition of an "interface" meaning that a common boundary must exist. As noted in figure 9B, each of the birefringent microstructures are adjacent to each other and meet on a common surface to one another. Accordingly, claim 1 is anticipated by Woodgate.
 - b. With respect to claim 11, applicant argues that an isotropic material is not disclosed. Applicant further argues Woodgate does not disclose what material the layer is made of. Examiner respectfully disagrees. Woodgate discloses that an active element comprises an isotropic material (page 26, line 14 – page 27, line 3).
 - c. With respect to claim 12, Examiner respectfully disagrees. Applicant argues that the polarization of the alignment material and the adjacent birefringent material must be the same direction. The birefringent lens array is a switchable component based upon electric fields generated. When the array is switched on, polarization directions appear to be the same (page 26, lines 14-27).

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2. Applicant's arguments with respect to claim 17 have been fully considered and are persuasive. Though applicant presents the point that unexpected results are produced, none are specifically disclosed.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-6, and 8-16 rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Pub. WO 03/015424 A2 to Woodgate et al (hereinafter Woodgate).

Woodgate discloses in figures 9B, 21 and pages 26-27, 36-38, a lens structure for a directional display apparatus comprising:

- A birefringent lens array (142) capable of directing light of a given polarization into a directional distribution, the birefringent lens comprising a solid, first birefringent material and an isotropic material (page 26, line 14 – page 27, line 3) having an interface having a refractive structure;
- A second birefringent material adjacent to the first (138) wherein a microstructure alignment mechanism is present (page 26, line 13).

As to claim 2, the material is switchable (abstract).

As to claim 3, the polarization is switchable (abstract).

As to claims 4-6 and 8-9, the alignment microstructure may be configured as claimed by surface relief, rubbed polyimide, or electro-magnetic means. (page 26, line 14 – page 27, line 3).

As to claim 10, the lens structure is arranged to receive light from the pixels of a spatial light modulator.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Woodgate as applied to claims above.

Woodgate discloses the invention as claimed, except for a spacer integrated with the first birefringent material.

It is respectfully noted that spacers, notches and various integrated mechanisms are well known in the alignment art (References cited as pertinent art below; More can be supplied if requested). Such provisions are used to set thicknesses and prevent movement to reduce optical errors.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide and at least have motivation to attempt for an alignment means such as a spacer or protrusion to prevent two layers from shifting to reduce optical errors.

Allowable Subject Matter

7. The following is an examiner's statement of reasons for allowance: Claims 17-18 disclose structure that includes the limitations of multiple birefringent microlens arrays made of electrically conductive materials sandwiched between electrodes to switch and direct light.

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Applicant has stated such structure produces new and unexpected results (not disclosed in arguments). Therefore, claim 17 is allowed. Claim 18 is allowable by virtue of dependency.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric Wong whose telephone number is (571)272-2363. The examiner can normally be reached on Monday through Friday, 830AM - 430PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font can be reached on 571-272-2415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Eric Wong/
Examiner, Art Unit 2883

/Frank G Font/
Supervisory Patent Examiner, Art Unit 2883

FGF/ew